Editorials

Predictors of Physician Performance

THE SEARCH FOR PREDICTORS of physician performance is nothing new. The predictors of whether a medical school applicant will be able to complete the work under the inevitable pressures and stress of the medical school curriculum must work pretty well since the vast majority of matriculants are successfully graduated four years later. But the predictors of whether a medical school applicant will be a "good doctor" have been harder to come by. There has been much discussion of the influence of role models and the great emphasis on science during the undergraduate medical school years and the effect of the practice habits learned in the relatively controlled and supervised environment of specialty and subspecialty training. There has been concern about whether all of this has had an adverse effect on the caring function of physicians in practice, and whether this in turn has reduced some of the affection and respect, not to mention love, that was formerly accorded doctors and the profession by their patients and the public.

Elsewhere in this issue Linn, Cope and Robbins have made a brave foray into these relatively uncharted waters by attempting to examine sociodemographic and premedical school factors that may predict graduate and postgraduate physicians' "humanistic" performance. Their studies appear to show that what happens in medical school or in postgraduate training makes very little, if any, difference in whether physicians will be more or less humanistic in their attitudes and behavior in practice situations. Rather, it is the sort of person who is admitted to medical school in the first place that is important. If that person is humanistically oriented, then these traits tend to persist in spite of what he or she may see or hear in the academic environment of the undergraduate years.

This sort of interest and this kind of a study may foreshadow a swing toward more interest in the physician-patient or humanistic aspects of health care. If this is so, then more studies such as that of Linn and co-workers will need to be done, and perhaps in time, the humanistic performance of medical school applicants will be considered as fully as important predictors of physician performance in practice as are the standard predictors of academic performance in medical school that are now used in the admissions process. If the value of these predictors can be demonstrated to the satisfaction of all concerned, it will surely be a boon to those responsible for medical school admissions who in the process select the physicians who will be the medical profession of the future.

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α_1-Antitrypsin—An Investigative Odyssey From the Benchtop to the Bedside

AS DR RESENDES POINTS OUT in this issue of the journal, our understanding of the clinical implications of protease-antiprotease homeostasis remains somewhat imperfect in the face of the recent explosion of information in this field of clinical investigation. Specifically, the saga of α_1-antitrypsin and its relevance to emphysema and other disorders has evolved over the short span of the past 25 years. The story evolves quickly from the initial recognition of the deficiency by Laurell and Eriksson[1] to a precise characterization of the molecular defect at the gene level.[2] Closely linked to this progress in experimental medicine have been the improved prospects for specific intervention in human emphysema.[3,4] As is the case in all forms of human endeavor, progress in the study of this serum protein has been matched by the generation of formidable new questions. Nonetheless, we should not be frustrated by our inability to unravel a complex problem with this single major clue. Clinical investigators cannot be other than encouraged by the quantum leap in our understanding of this disease process, coincident with the research interest in α_1-antitrypsin. It must be recalled that prior to the recovery of this (α_1-antitrypsin) piece of the emphysema puzzle, our comprehension of the pathogenesis of this disease was primitive in every respect. A fortuitous coincidence in the history of experimental medicine occurred in the early 1960s with Gross's description of a protease-induced model of emphysema and Laurell and Eriksson's "simultaneous" recognition of the elegant "experiment in nature" provided by α_1-antitrypsin deficiency. The rapid exploitation of these crucial breaks in nature's cipher provides considerable reinforcement for the joy of clinical investigation. Since those two seminal reports, the number of scientific publications in this field of clinical investigation has grown to nearly 3,000 as of April 1987. With this proliferation of published activity has come crucial insight into the cellular and molecular basis for an important human disease, as well as additional support for the crucial role of "homeostasis" between opposing physiologic processes in the preservation of normal biologic structure and function.

Although many of the hypotheses central to our present concepts of the pathogenesis of emphysema were derived directly from the lessons learned from this inherited form of the disease, the resultant investigative momentum led quickly to important clues relevant to the more common, acquired form of the disease. This initiative has led to important insight into a potential pathogenetic link between cigarette smoking and human lung disease. This investigative crossover required input from investigators in all the relevant disciplines of experimental medicine: pathology, epidemiology, biochemistry, immunology, physiology and molecular biology. In every instance, diverse experimental strategies converged to make scientific inroads into the emphysema puzzle. This progress has been limited only by the cumulative imagination of the workers in this expanding field and the available methodology. At present, it is clear that neither resource has been fully expended in the search for the complete solution to this disease process.

Nonetheless, as so well detailed in Dr Resendes's review, cracks have appeared in the buttresses supporting the "protease-antiprotease hypothesis of emphysema." Ironically, the scientific link between cigarette-induced emphysema and the form inherited with antiprotease deficiency has added complexity to the puzzle's solution. Namely, if indeed cigarette smoking induces a form of acquired functional deficiency in the lung's α_1-antitrypsin through the oxidation of a methionine residue in the inhibitor's active site, then the basis for individual variability in disease expression remains obscure. In fact, the recognition of the potential role that reactive species of oxygen may play in the pathogenesis of emphysema has resulted in the development of the "oxidant theory

of emphysema." The oxidant concept can be viewed as either a corollary or a competitor to the "conventional" protease theory of pathogenesis. The scientific interest in the biologic effects of "free radicals" of oxygen, as well as in their chemistry, has set the stage for an additional solution of this complex clinical cryptogram. Regardless of the direction in which the scientific consensus is tipped, as new leads are pursued, the interests of clinical investigation will be well served. A quarter century hence, the price of this endeavor (measured as difficult lessons of humility in science) will pale by comparison to the predictable strides made in unraveling the cipher of human disease.

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Are We Losing Ourselves Among the Trees?

IN MANY WAYS one can think of health care, and with it the medical profession, as wandering among the trees and in the underbrush of a huge forest with little or no sense of which way to turn. The trees are many—competition among physicians and with and among hospitals, government regulation within a "free" market in health care, the "bottom line," cost containment, professional liability, defensive medicine, new science, new technology, unprecedented bioethical dilemmas—to name but a few. Then, besides the trees, there is the underbrush, miserable thickets in which everything seems to get almost hopelessly tangled up—HMOs, IPAs, PPOs, DRGs, PROs—again, to name but a few. And then there are other ethical, moral and fiscal dilemmas: the balance of quality against cost, of physician advocacy of what he or she believes best or needed for a patient and the reality that there are simply not enough dollars to pay for doing everything for every patient that a well-trained physician may know how to do.

The trees and the underbrush are what we see all about us. They occupy much of the time and energy of practicing physicians and of the medical associations that represent them and their patients' interests. In many ways they deflect not only energy, but resolve and resources from what health care is all about.

But the forest is something larger than all the trees and all the underbrush. A greater reality is the people who are what health care is all about—the people who receive the care and the people who actually give the care and use their training and skills in the art and science to deliver it. Another greater reality is that 40% of the people in this nation have no health insurance at all, either public or private, and therefore can only have impaired access to care when they need it. Somewhere, somehow, there exists a right of access to needed health care. And yet another greater reality, fully as serious as the others, is that physicians and other health care providers are being diverted from placing a patient's interests first, ahead of their own or those of other parties at interest in a patient's care.

In these terms the forest itself appears as the greatest reality of all. It is telling us that what we are doing now—that is, the present approach and the present systems of health care delivery, as reflected in the trees and underbrush in the metaphor described above—is inadequate, off the mark and in the long run certain to be unacceptable. But who is listening?

Who will be the first to see the forest for what it is? Will it be the public, the people who need care and believe they have a right to it, a public that perceives itself to be underserved amidst an unprecedented plethora of superbly trained physicians and other health care personnel and in the presence of an unprecedented plethora of underutilized hospital beds and other health care resources? Or will it be a government that sees in this another and unprecedented opportunity for more bureaucratic power and control over the health and well-being of its citizens? Or could it be a profession comprised of persons whose primary incentive should be to apply its very special training and skills to give the care that is needed to patients, in a reasonably efficient system that effectively balances the needs with the resources available? Probably no group in the nation has a better view of the real forest of health care than the medical profession. Can it, or will it, step back, take account of stock as it were, and rise to see, hear and comprehend the forest that now seems so effectively obscured by the trees, not to mention the underbrush, that patently dominates so much contemporary thinking about medical practice, patient care, and indeed all of health care delivery? If this should by any chance happen it could bring about an unimagined renaissance of power and prestige for our profession.

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